

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

**EP 0 999 080 A2**

(12)

**EUROPEAN PATENT APPLICATION**

(43) Date of publication:  
10.05.2000 Bulletin 2000/19

(51) Int. Cl.<sup>7</sup>: **B60J 7/04**, B62D 25/24

(21) Application number: **99121588.0**

(22) Date of filing: **29.10.1999**

(84) Designated Contracting States:  
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU**  
**MC NL PT SE**  
Designated Extension States:  
**AL LT LV MK RO SI**

(30) Priority: **06.11.1998 NL 9810104**

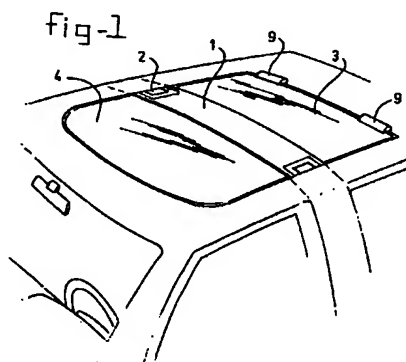
(71) Applicant:  
**Vermeulen Hollandia Octrooien II B.V.**  
**2003 RX Haarlem (NL)**

(72) Inventors:  
• **Zonneveld, Eric Petrus**  
**1963 KG Heemskerk (NL)**  
• **De Vries, Frits Pieter**  
**1851 BV Helloo (NL)**

(74) Representative: **Wiese, Gerhard**  
**Möbus/Schwan/Wiese**  
**Georgenstrasse 6**  
**82152 Planegg (DE)**

**(54) Vehicle provided with an open roof construction**

(57) In order to improve the safety of a vehicle provided with an open roof construction having a relatively large roof opening, a centre bar is fixed to the body of the vehicle in the mid region of the roof opening. Said centre bar is located in view inside the vehicle and can be used for the fitting of facilities such as roller sunblinds, storage compartments and light fittings.



**EP 0 999 080 A2**

**BEST AVAILABLE COPY**

## Description

[0001] The invention relates to a vehicle provided with an open roof construction.

[0002] An increasing percentage of car buyers want a sliding roof with a large slide opening and/or a large glass surface.

[0003] German Patent Application 3 802 380 shows a vehicle roof having a large roof opening which can be covered by two roof panels positioned one behind the other: the rear panel can be removed - after unlocking - and the front panel can first be tilted in the manner of a so-called spoiler roof such that the rear edge is raised and can then be slid backwards.

[0004] German Utility Model 29 512 643 shows a vehicle having a spoiler roof consisting of two panels, which are positioned one behind the other and are slidable in the longitudinal direction of the vehicle, and means for pivoting the panels upwards into the ventilation position and for moving them in the opposite direction into the closed position.

[0005] These known constructions do not have a roof cross-member, which greatly increases the safety of the occupants in the event of a collision from the side. It is true that such a roof cross-member, fitted between the B-pillars of the body of a vehicle, is known per se, but this would have to be removed if the abovementioned vehicle roof construction had to be fitted. The removal of a roof cross-member is not desirable. After all, the sliding roof construction does not assume or inadequately assumes the safety function of the roof cross-member.

[0006] The aim of the invention is to provide a vehicle as specified in the preamble, provided with an open roof construction, with which the safety of the occupants is not put at issue.

[0007] According to the invention, the vehicle as specified in the preamble is to this end characterised in that a centre bar, which increases safety and is intended for the fitting of facilities, is fixed to the body of the vehicle in the mid region of the roof opening, which centre bar is in view inside the vehicle.

[0008] The centre bar can replace the centre cross-member which is fitted as standard in the vehicle and has been removed.

[0009] Preferably, the fixing means for fixing the said centre bar to the body comprise fixing brackets.

[0010] If the open roof construction is provided with a frame that delimits the edges of the roof opening, the ends of the centre bar can have been fixed to the frame.

[0011] The centre bar can serve to house a wide variety of accessories, such as two roller sunblinds, one that can be moved forwards from the centre bar and one that can be moved to the rear from the centre bar into the working position, storage compartments and light fittings.

[0012] Vents can have been fitted, as well as light fittings, at the rear edge of the rear panel.

[0013] Movement of the front panel can be implemented in various ways. Preferably, the front panel is able to slide over the rear panel following a lifting movement.

[0014] The invention will now be explained in more detail with reference to the figures, in which an illustrative embodiment is shown.

Figures 1, 2 and 3 show perspective views of the top section of a vehicle having an open roof construction according to the invention provided with a sliding roof, in, respectively, the completely closed position and two successive positions in order to achieve the open ventilation position.

Figure 4 shows a perspective view of the lower face of the sliding roof

[0015] The vehicle shown has a sliding roof having a robust, fixed centre bar 1 which is fixed at two ends to the body by means of brackets 2. The centre bar gives rise to greatly increased safety.

[0016] A rear glass panel 3 is fixed by its front edge to the centre bar 1 and is not movable. The rear edge of the rear glass panel seals against the rear edge of the roof opening 7 or of the sliding roof frame, 16.

[0017] The front panel 4 is movable between an open and a closed position. Movement of this panel can be realised in various ways. In the illustrative embodiment shown the front panel 4 is first raised into a position higher than the fixed rear panel 3 and is then slid backwards over the rear panel.

[0018] As far as safety is concerned, the centre bar 1 constitutes a replacement for the roof cross-member (insofar as this was present) and, as Figure 4 shows, can be used for fitting two sunblinds 5, 6: one that moves forwards from the centre bar 1 and one that moves backwards from the centre bar 1 into the position in which they provide protection against the sun.

[0019] Furthermore, storage compartments, light fittings (8 in Figure 4), switches for controlling the sunblinds and other accessories can have been fixed to the centre bar 1.

[0020] Vents 9 to improve the discharge of air can have been fitted, as well as light fittings, storage nets 10, etc., at the rear edge of the sliding roof frame. Accessories, such as a storage net 11, can also have been fitted at the front edge of the frame of the sliding roof.

[0021] The invention is not restricted to a vehicle provided with a sliding roof construction having two glass panels positioned one behind the other and can be used for other open roof constructions having a large opening in the roof. The essential feature is that a centre bar is fixed to the body of the vehicle in the mid region of the roof opening, which centre bar is in view inside the vehicle and can be used for the fitting of facilities.

List of reference numerals:

[0022]

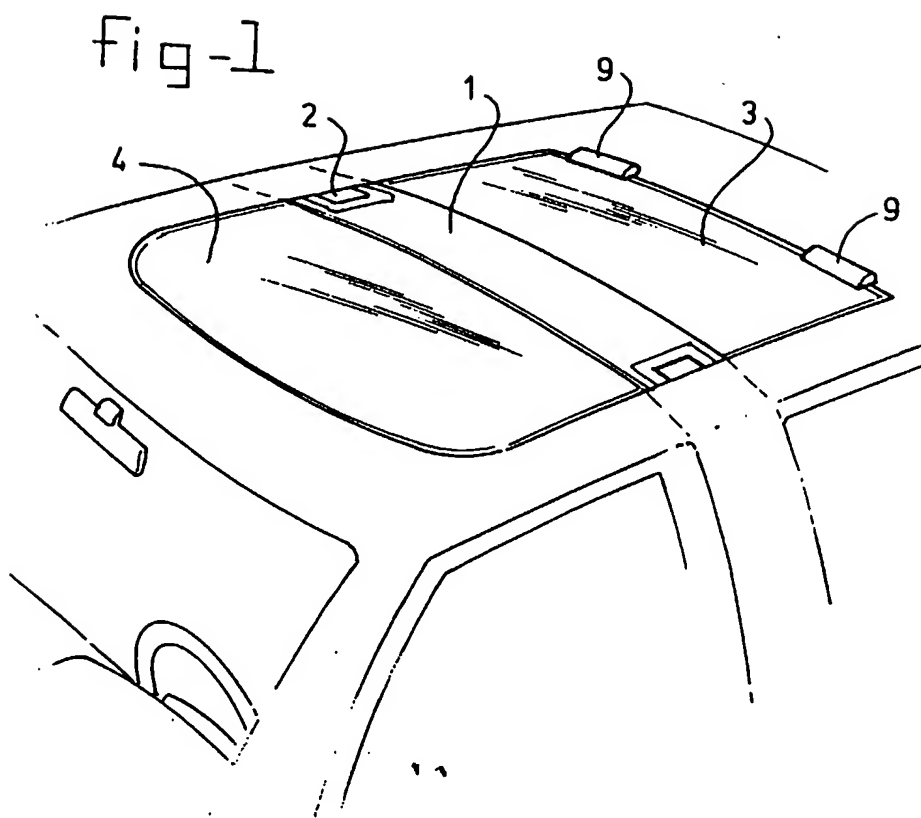
- 1 centre bar
- 2 brackets
- 3 rear panel
- 4 front panel
- 5 sunblind
- 6 sunblind
- 7 roof opening
- 8 light fittings
- 9 vents
- 10 storage net
- 11 storage net
- 16 frame

- 8. Vehicle according to one of Claims 5 to 7, characterised in that vents (9) are fitted at the rear edge of the rear glass panel (3).
- 5 9. Vehicle according to one of Claims 5 to 8, characterised in that light fittings are fitted at the rear edge of the rear panel (3).
- 10 10. Vehicle according to one of Claims 1 to 4 having two glass panels (3, 4) positioned one behind the other, the front panel (4) of which is able to slide over the rear panel (3) following a lifting movement.

15

#### Claims

- 1. Vehicle provided with an open roof construction, characterised in that a centre bar (1), which increases safety and is intended for the fitting of facilities (5, 6, 8), is fixed to the body of the vehicle in the mid region of the roof opening (7), which centre (1) bar is in view inside the vehicle. 20 25
- 2. Vehicle according to Claim 1, characterised in that the centre bar (1) replaces the centre cross-member which is fitted as standard in the vehicle and has been removed. 30
- 3. Vehicle according to one of the preceding claims, characterised in that the fixing means for fixing the said centre bar to the body comprise fixing brackets. 35
- 4. Vehicle according to one of the preceding claims, the open roof construction of which is provided with a frame (16) that delimits the edges of the roof opening, characterised in that the ends of the centre bar are fixed to the frame. 40
- 5. Vehicle according to one of the preceding claims, having two glass panels (4, 3) positioned one behind the other, characterised in that the centre bar (1) serves to house two separate roller sunblinds (5, 6): one that can be moved forwards from the centre bar (1) and one that can be moved to the rear from the centre bar into the working position. 45 50
- 6. Vehicle according to one of the preceding claims, characterised in that storage compartments are fitted on the centre bar (1).
- 7. Vehicle according to one of the preceding claims, characterised in that light fittings (8) are fitted on the centre bar (1). 55



BEST AVAILABLE COPY

fig-2

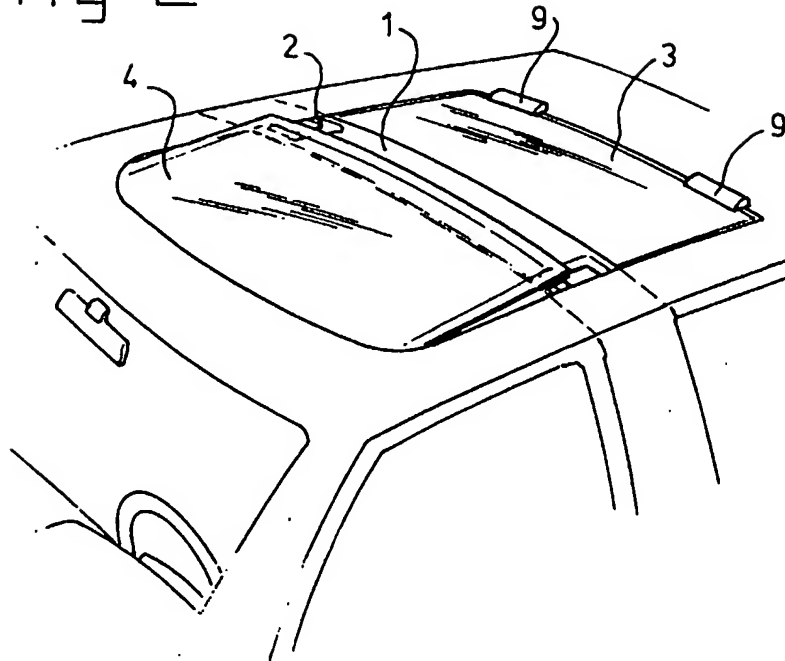
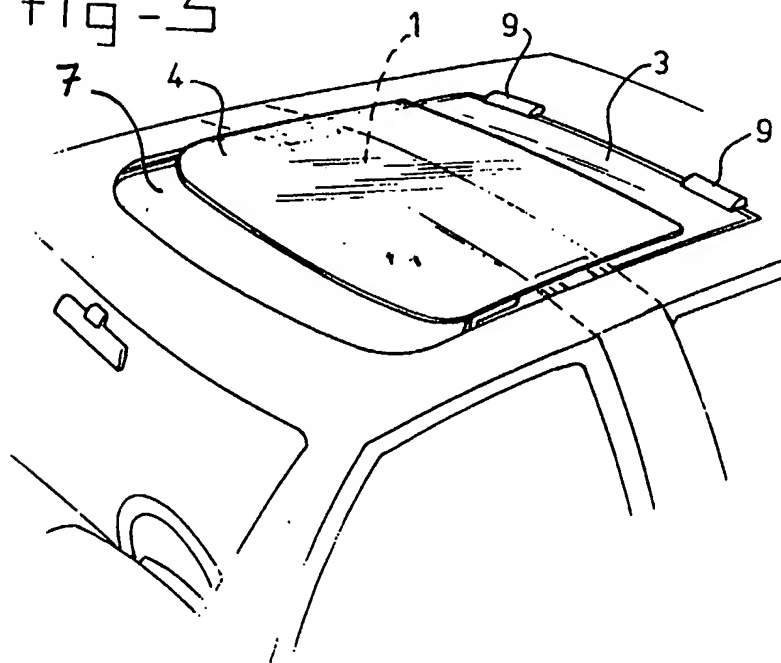
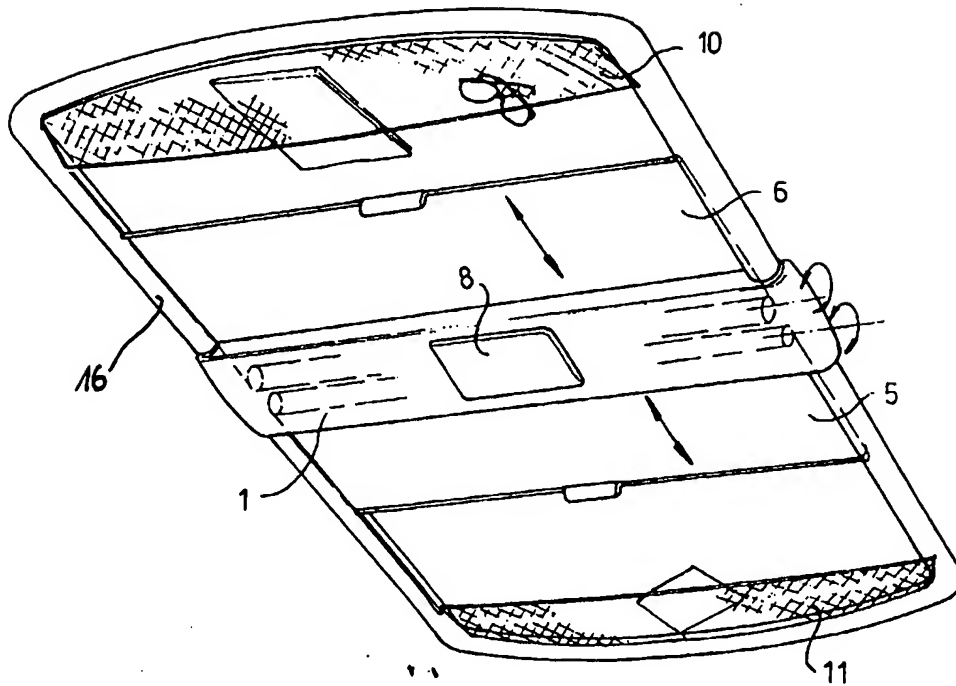


fig-3



BEST AVAILABLE COPY

fig-4



BEST AVAILABLE COPY